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- 7. The field effect transistor of claim 5, wherein:
- the lightly n-doped body region is disposed between the respective source region, the gate insulator region, and the drain region proximate the trench gate region; and
- the heavily n-doped body region is disposed between the drain region, the lightly n-doped body region, the respective source region, and the source metal contact.
- **8**. The field effect transistor of claim **1**, further comprising a Schottky junction disposed at the top surface where the source metal contact is physical contact with the portion of the drain region.
- **9.** The field effect transistor of claim **1**, wherein said pair of source regions are formed as substantially parallel elongated structures.
 - 10. A field effect transistor comprising:
 - a first and second trench gate regions extending into a semiconductor substrate for a first predetermined depth;
 - a first source region disposed in the semiconductor substrate and proximate the first trench gate region; 20
 - a second source region disposed in the semiconductor substrate and proximate the second trench gate region;
 - a first lightly-doped body region disposed below said first source region proximate said first trench gate region and 25 extending into the semiconductor substrate for a depth that is less than the first predetermined depth;
 - a second lightly-doped body region disposed below said second source region proximate said second trench gate region and extending into the semiconductor substrate for a depth that is less than the first predetermined depth;
 - a third heavily-doped body region disposed in the semiconductor substrate and adjacent said first source region and above said first lightly-doped body region;
 - a fourth heavily-doped body region disposed in the semiconductor substrate and adjacent said second source region and above said second lightly-doped body region;
 - a drain region disposed in the semiconductor substrate and between said first and second lightly-doped body regions and said third and fourth heavily-doped body regions and between said first and second gate regions, wherein said first lightly-doped body region and said third heavily-doped body region are disposed between said drain region and said first source region and wherein 45 said second lightly-doped body region and said fourth heavily-doped body region are disposed between said drain region and said second source region;
 - a source contact disposed on a top surface of the semiconductor substrate and-in physical contact with said first 50 and second source regions, said third and fourth heavily-doped body regions and a portion of said drain region disposed between said first and second trench gate regions;
 - a first gate insulator region insulating said first trench gate region from said first source region, said first lightly-doped body region, said drain region, and said source contact; and
 - a second gate insulator region insulating said second trench gate region and said second source region, said second lightly-doped body region, said drain region, and said source contact.

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- 11. The field effect transistor of claim 10, wherein:
- said first and second source regions comprise an n-doped semiconductor;
- said drain region comprises an n-doped semiconductor;
- said first and second lightly-doped body regions comprise a p-doped semiconductor.
- 12. The field effect transistor of claim 11, wherein said drain region comprises: a heavily n-doped portion; and
 - a lightly n-doped portion disposed between said heavily n-doped portion and said first and second lightly-doped body regions, said third and fourth heavily-doped body regions, and said source contact.
- 13. The field effect transistor of claim 11, wherein:
- said first lightly-doped body region comprises a lightly p-doped portion disposed between said first source region and said drain region proximate said gate region;
- said third heavily-doped body region comprises a heavily p-doped portion disposed proximate said drain region and said source contact;
- said second lightly-doped body region comprises a lightly p-doped portion disposed between said second source region and said drain region proximate said gate region; and
- said fourth heavily-doped body region comprises a heavily p-doped portion disposed proximate said drain region and said source contact.
- 14. The field effect transistor of claim 11, wherein:
- said first and second source regions comprise a p-doped semiconductor;
- said drain region comprises a p-doped semiconductor; and said first and second lightly-doped body regions comprise an n-doped semiconductor.
- **15**. The field effect transistor of claim **14**, wherein said 35 drain region comprises:
 - a heavily p-doped portion; and
 - a lightly p-doped portion disposed between said heavily p-doped portion and said first and second lightly-doped body regions, said third and fourth heavily-doped body regions, and said source contact.
 - 16. The field effect transistor of claim 14, wherein:
 - said first lightly-doped body region comprises a lightly n-doped portion disposed between said first source region and said drain region proximate said first gate region;
 - said third heavily-doped body region comprises a heavily n-doped portion disposed proximate said source contact:
 - said second lightly-doped body region comprises a lightly n-doped portion disposed between said second source region and said drain region proximate said second gate region; and
 - said fourth heavily-doped body region comprises a heavily n-doped portion disposed proximate said source contact.
 - 17. The field effect transistor of claim 10, further comprising a Schottky junction disposed at an interface between said source contact and said portion of said drain region proximate said first and second lightly-doped body regions.
 - 18. The field effect transistor of claim 10, wherein said first and said second gate regions are formed as substantially parallel elongated structures.

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